

Claims

What is claimed is:

1. An object oriented method for implementing a persistence mechanism, said persistence mechanism adapted to effectuate data transfer between a software application and a relational database, said method comprising the steps of:
 - identifying homes and relationships, each identified home comprising attributes of a table of the database, each identified relationship having attributes describing an interaction between two homes of said identified homes;
 - providing a datastore that is associated to the database, said datastore including attributes, said attributes of the datastore comprising the attributes of the identified homes and the attributes of the identified relationships;
 - providing a single home class adapted to be instantiated to any one of said identified homes;
 - providing a single relationship class adapted to be instantiated to any one of said identified relationships;
 - generating a query to transfer data between the application and the database, said generating comprising processing a first home of said identified homes, said first home comprising attributes of a first table of the database, said processing the first home comprising instantiating the home class to an instance of the first home by setting attributes of the first home.

1 2. The method of claim 1, wherein the method does not comprise providing more than one class in
2 relation to the identified homes.

1 3. The method of claim 2, wherein the method further comprises generating a text document,
2 wherein the text document includes attributes of the datastore which comprise the attributes of the
3 identified homes and the attributes of the identified relationships, and wherein setting the
4 attributes of the first home comprises extracting the attributes of the first home from the text
5 document.

1 4. The method of claim 3, wherein the text document is a eXtensible Markup Language (XML)
2 document.

1 5. The method of claim 1, wherein the query is adapted to transfer data from the application to at
2 least one row of the first table.

1 6. The method of claim 5, wherein the at least one row does not include all rows of the first table.

1 7. The method of claim 1, wherein the query is adapted to transfer data from at least one row of
2 the first table to the application.

1 8. The method of claim 7, wherein the at least one row does not include all rows of the first table.

1 9. The method of claim 7, wherein the method further comprises:

2 executing the query to generate a result set; and

3 looping through the result set to create a list of objects holding the data transferred from
4 the at least one row.

1 10. The method of claim 1, wherein said generating further comprises:

2 creating by lazy initialization a list of source relationships of said identified relationships
3 in which the first home is a source home; and

4 creating by lazy initialization a list of target relationships of said identified relationships in
5 which the first home is a target home.

1 11. The method of claim 1, wherein the first home is a target home, and wherein said generating
2 further comprises finding a relationship of said identified relationships for a given source role.

1 12. The method of claim 1, wherein the first home is a source home, and wherein said generating
2 further comprises finding a relationship of said identified relationships for a given a source role.

1 13. The method of claim 1, wherein said generating further comprises finding a source row for a
2 given target row and given relationship of said identified relationships.

1 14. The method of claim 13, wherein the given relationship comprises a key field that contains a

2 data value, and wherein said generating comprises transferring the data value from the key field to
3 the query so as to limit the number of rows of the first table processed via the query.

1 15. The method of claim 1, wherein said generating further comprises finding at least one target
2 row for a given source row and given relationship of said identified relationships.

1 16. The method of claim 15, wherein the given relationship comprises a key field that contains a
2 data value, and wherein said generating comprises transferring the data value from the key field to
3 the query so as to limit the number of rows of the first table processed via the query.

1 17. The method of claim 16, wherein key fields comprising said key field are adapted to be
2 serialized and maintained between successive sessions during which the method is deployed such
3 that data associated to each of said key fields does not have to be reconstituted in said successive
4 sessions.

1 18. The method of claim 1, wherein the method further comprises providing a visual editor
2 adapted to permit:
3 visual editing of the attributes of the identified homes; and
4 visual editing of the attributes of the identified relationships.

1 19. The method of claim 1, wherein the step of identifying homes and relationships comprises

2 importing schema from the database, and wherein the attributes of the homes and relationships are
3 derived from said schema.

1 20. The method of claim 1, wherein the method further comprises exporting to the database
2 schema definitions relating to a home of the identified homes.

1 21. A computer system comprising a processor and a computer readable memory unit coupled to
2 the processor, said memory unit containing instructions that when executed by the processor
3 perform an object oriented method for implementing a persistence mechanism, said persistence
4 mechanism adapted to effectuate data transfer between a software application and a relational
5 database, said method comprising the computer implemented steps of:

6 identifying homes and relationships, each identified home comprising attributes of a table
7 of the database, each identified relationship having attributes describing an interaction between
8 two homes of said identified homes;

9 providing a datastore that is associated to the database, said datastore including attributes,
10 said attributes of the datastore comprising the attributes of the identified homes and the attributes
11 of the identified relationships;

12 providing a single home class adapted to be instantiated to any of said identified homes;

13 providing a single relationship class adapted to be instantiated to any one of said identified
14 relationships;

15 generating a query to transfer data between the application and the database, said
16 generating comprising processing a first home of said identified homes, said first home
17 comprising attributes of a first table of the database, said processing the first home comprising
18 instantiating the home class to an instance of the first home by setting attributes of the first home.

1 22. The computer system of claim 21, wherein the method does not comprise providing more than
2 one class in relation to the identified homes.

1 23. The computer system of claim 22, wherein the method further comprises generating a text
2 document, wherein the text document includes attributes of the datastore which comprise the
3 attributes of the identified homes and the attributes of the identified relationships, and wherein
4 setting the attributes of the first home comprises extracting the attributes of the first home from
5 the text document.

1 24. The computer system of claim 23, wherein the text document is a eXtensible Markup
2 Language (XML) document.

1 25. The computer system of claim 21, wherein the query is adapted to transfer data from the
2 application to at least one row of the first table.

1 26. The computer system of claim 25, wherein the at least one row does not include all rows of
2 the first table.

1 27. The computer system of claim 21, wherein the query is adapted to transfer data from at least
2 one row of the first table to the application.

1 28. The computer system of claim 27, wherein the at least one row does not include all rows of
2 the first table.

1 - - - 29. The computer system of claim 27, wherein the method further comprises: - - - - -

2 executing the query to generate a result set; and

3 looping through the result set to create a list of objects holding the data transferred from

4 the at least one row.

1 30. The computer system of claim 21, wherein said generating further comprises:

2 creating by lazy initialization a list of source relationships of said identified relationships

3 in which the first home is a source home; and

4 creating by lazy initialization a list of target relationships of said identified relationships in

5 which the first home is a target home.

1 31. The computer system of claim 21, wherein the first home is a target home, and wherein said

2 generating further comprises finding a relationship of said identified relationships for a given

3 source role.

1 32. The computer system of claim 21, wherein the first home is a source home, and wherein said

2 generating further comprises finding a relationship of said identified relationships for a given a

3 source role.

1 33. The computer system of claim 21, wherein said generating further comprises finding a source

2 row for a given target row and given relationship of said identified relationships.

34. The computer system of claim 33, wherein the given relationship comprises a key field that contains a data value, and wherein said generating comprises transferring the data value from the key field to the query so as to limit the number of rows of the first table processed via the query.

35. The computer system of claim 21, wherein said generating further comprises finding at least one target row for a given source row and given relationship of said identified relationships.

36. The computer system of claim 35, wherein the given relationship comprises a key field that contains a data value, and wherein said generating comprises transferring the data value from the key field to the query so as to limit the number of rows of the first table processed via the query.

37. The computer system of claim 36, wherein key fields comprising said key field are adapted to be serialized and maintained between successive sessions during which the method is deployed such that data associated to each of said key fields does not have to be reconstituted in said successive sessions.

38. The computer system of claim 21, wherein the method further comprises providing a visual editor adapted to permit:

visual editing of the attributes of the identified homes; and

visual editing of the attributes of the identified relationships.

-1 - - 39. The computer system of claim 21, wherein the step of identifying homes and relationships
2 comprises importing schema from the database, and wherein the attributes of the homes and
3 relationships are derived from said schema.

1 40. The computer system of claim 21, wherein the method further comprises exporting to the
2 database schema definitions relating to a home of the identified homes.